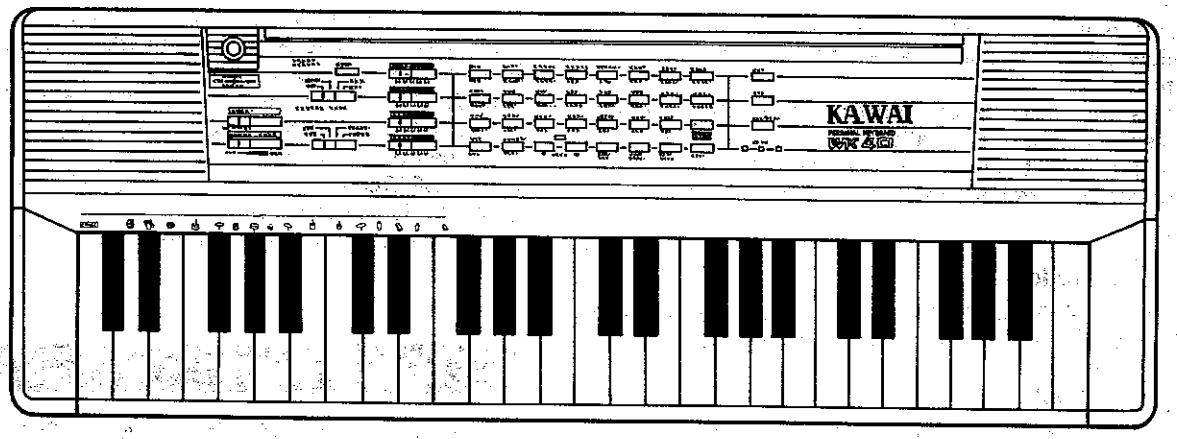
KAWAI

PERSONAL KEYBOARD

WK40

OWNER'S MANUAL



Care and Maintenance

Congratulations! You are now the proud owner of a Kawai WK40 Personal Keyboard. To keep this delicate electronic instrument in top performing condition and ensure years of troublefree playing enjoyment, please observe the following precautions.

Location

Avoid continued use or storage in the presence of the following environmental factors as they may contribute to faulty operation or breakdowns:

- Exposure to direct sunlight
- Excessive heat or humidity
- Sand or dust
- Excessive vibration

Short Circuits

- Never allow liquids or foreign objects — especially metallic objects — to fall between the keys. They can lead to dangerous short circuits that can damage the instrument — usually beyond repair.
- Never attempt to disassemble, service, or otherwise modify the internal components. Such willful tampering not only invalidates your warranty, but also entails the risk of a short circuit.

Power Supply

- Connect the PS121 or PS123 AC adapter to a power outlet with a voltage matching the one on the ratings plate.
- Before connecting or disconnecting the power supply, make sure that the POWER switch is OFF.

Cleaning

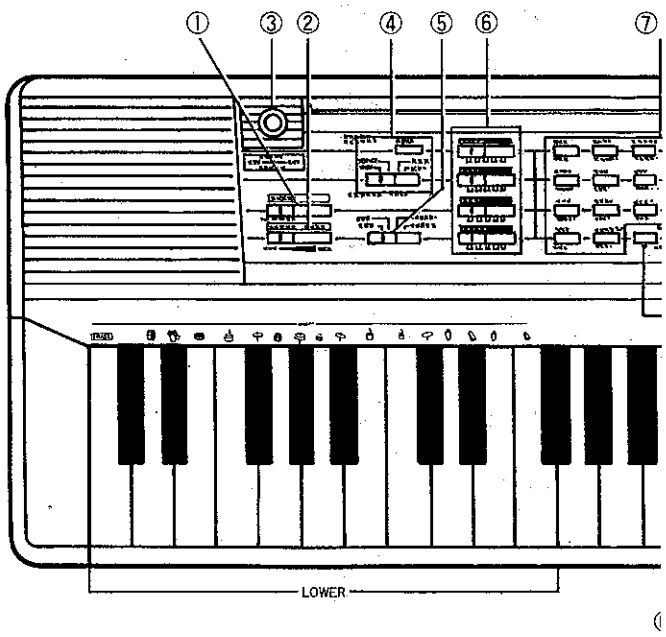
Wipe with a clean, dry cloth. Under no circumstances use benzene, paint thinner, or any other organic solvents.

Battery Backup

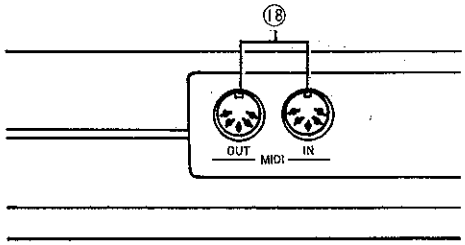
The keyboard contains a lithium battery that maintains memory contents even after the main power supply is removed. This battery normally lasts for four years. Connect your nearest authorized Kawai dealer for a replacement promptly after the four years have elapsed.

1. Major Parts and Their Functions

1.1 Front Panel



1.2 Rear Panel



① POWER switch
This controls power to the keyboard.

② MASTER VOLUME
This controls the output level.

③ Joystick
This provides a quick and easy way to change certain aspects of the melody during a performance.

Note: The joystick automatically returns to its central position when released.

DUET — When the automatic accompaniment is in operation, pulling the stick forward adds another note of a lower pitch to subsequent notes that you play on the keyboard. Pulling the stick forward a second time cancels the effect.
VIBRATO — Pushing the stick away from you adds vibrato to the output. The amount of vibrato added increases with distance from the center.
BEND UP — Pushing the stick to the right raises the pitch of the output. The size of the pitch change increases with distance from the center.
BEND DOWN — Pushing the stick to the left lowers the pitch of the output. The size of the pitch change increases with distance from the center.

④ PATTERN MAKER
This section allows you to replace the built-in two-bar accompaniment patterns with your own.

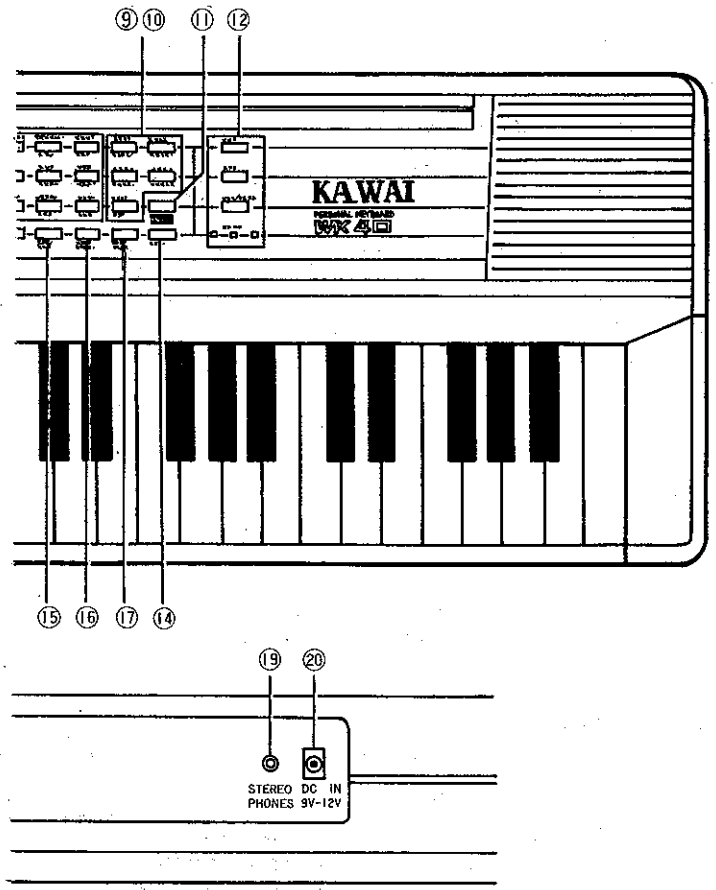
OFF — Deactivates the PATTERN MAKER section.
CHORD — Activates the CHORD EDIT function.
BASS — Activates the BASS EDIT function.
RHYTHM — Activates the RHYTHM EDIT function.
CLEAR switch — Clears (erases) the pattern.

⑤ LOWER MODE
This section controls the accompaniment facilities for the lower keyboard.

OFF — Deactivates the LOWER MODE functions.
AUTO — Activates the automatic accompaniment function.
CHORD/BASS — Activates the chord or bass accompaniment function.
DRUMS — Activates the hand percussion function.

⑥ MIXER
This section controls the volume balance between the various parts.

MELODY — Controls the relative volume for the melody.
CHORD — Controls the relative volume for the chords.
BASS — Controls the relative volume for the bass part.
RHYTHM — Controls the relative volume for the rhythm accompaniment.



⑦ MELODY TONE switches
These offer a selection of 20 tone voices for the melody.

⑧ RHYTHM switches
These offer a selection of 20 patterns for the rhythm accompaniment.

Note: To activate the RHYTHM switches, you must first press the RHYTHM/BASS selector.

⑨ CHORD TONE switches
These offer a selection of 5 tone voices for the chords.

⑩ BASS TONE switches
These offer a selection of 5 tone voices for the bass accompaniment.

Note: To activate the BASS switches, you must first press the RHYTHM/BASS selector.

⑪ RHYTHM/BASS selector
This changes the MELODY and CHORD switches into their RHYTHM and BASS counterparts.

⑫ RECORDER switches
This section controls the operation of the song recording/playback facilities.

REC — Activates the recording function.
PLAY — Plays back the recorded song.
STOP/SELECT — Pauses recording/playback and selects the song.

⑬ TEMPO switches
Adjust the playback speed.

⑭ DEMO switch
This plays a built-in demonstration song.

⑮ START/STOP switch
This activates/deactivates the rhythm accompaniment.

⑯ SYNC/FILL IN switch
If the rhythm accompaniment has not already started, this synchronizes the start of the accompaniment with the next note played on the keyboard (SYNC). Otherwise, it provides a rhythm variation (FILL IN).

⑰ INTRO/ENDING
If the rhythm accompaniment has not already started, this plays a one-bar introduction and then starts the rhythm accompaniment. Otherwise, it completes the current bar of the rhythm pattern, plays a special ending rhythm pattern, and then shuts off the rhythm accompaniment.

Note: The INTRO, ENDING, and FILL IN patterns vary with the base rhythm pattern.

⑱ MIDI connectors
These provide a world-standard interface for connecting the instrument to a wide variety of electronic equipment — other musical instruments and personal computers, for example.
MIDI OUT — Transmits MIDI data.
MIDI IN — Accepts data from other MIDI equipment.

⑲ STEREO PHONES jack
This connects to headphones or audio equipment.

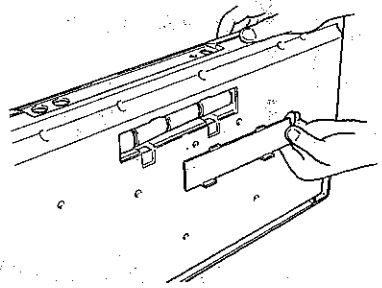
⑳ DC IN jack
This connects to the AC adapter.

2. Setting Up

This instrument runs on either batteries or household current.

2.1 Battery Operation

Remove the cover from the battery compartment under the instrument and insert six "C" dry cells.



Notes

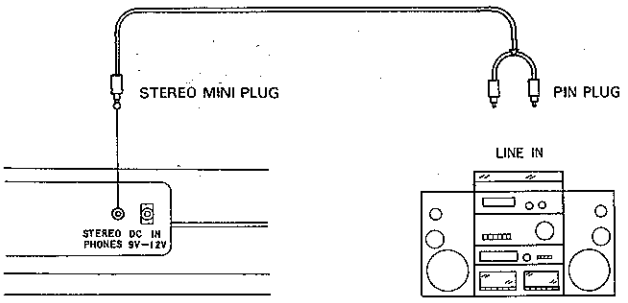
- If the sound fades or quality deteriorates during a session, it is time to change batteries.
- Make sure that the batteries face in the right direction. (Follow the guide imprinted in the lining of the compartment.)
- Always change batteries as a set. Never change fewer than six at a time or mix batteries of different types.
- Always remove the batteries when not using the instrument for an extended period — when storing it, for example.

2.2 AC Operation

Connect the PS121 or PS123 AC adapter to a power outlet with a voltage matching the one on the ratings plate.

2.3 Line Output

To listen to keyboard output on audio equipment instead of headphones, buy the appropriate adapter cable and connect the STEREO PHONES jack on the keyboard to the LINE IN jacks on the audio equipment.



3. Changing Tone Voices and Rhythm Patterns

Your WK40 features a wide selection of built-in tone voices and rhythm patterns:

20 tone voices for the melody
20 patterns for the rhythm accompaniment
5 tone voices for the chords
5 tone voices for the bass accompaniment

To change the MELODY or BASS selection, simply press the corresponding switch. To change the RHYTHM or BASS selection, press the RHYTHM/BASS selector first.

TOP NOTE DUAL Function

Holding down one MELODY SELECT switch and pressing another activates the TOP NOTE DUAL function, which then automatically sounds the highest note being played with two tone voices. (The lower notes sound with the first tone voice only.)

- The two tone voice selections must be different.
- Selecting another tone voice for the melody automatically cancels this function.

4. Using the Joystick

The joystick provides a quick and easy way to change certain aspects of the melody during a performance.

Note: The joystick functions do not affect the LOWER MODE accompaniment.

Note: The joystick automatically returns to its central position when released.

DUET — Pulling the stick forward adds another note of a lower pitch to subsequent notes that you play on the keyboard. If you play more than two notes at once, only the highest one is affected. Pulling the stick forward a second time cancels the effect.
VIBRATO — Pushing the stick away from you adds vibrato to the output. The amount of vibrato added increases with distance from the center.
BEND UP/DOWN — Pushing the stick to the right or left respectively raises or lowers the pitch of the output. The size of the pitch change increases with distance from the center.

5. LOWER MODE

This function allows you use different tone voices for the lower keyboard accompaniment and the melody.

AUTO — Activates the automatic accompaniment function, which then supplies an appropriate accompaniment based on the current CHORD, BASS and RHYTHM selections.
CHORD/BASS — Activates the chord or bass accompaniment function.

Note: One- and two-finger chording are available along with the standard chords.

Note: The CHORD and BASS selector switches determine the tone voice for the lower keyboard.

DRUMS — Activates the hand percussion function.
OFF — Deactivates the LOWER MODE functions.

6. PATTERN MAKER

This section allows you to replace each of the four built-in two-bar accompaniment patterns with one of your own.

■ Procedure

1. Select the rhythm pattern.
2. Shift the PATTERN MAKER switch to the RHYTHM position to play back the accompaniment pattern.

3. Press the CLEAR switch to erase the rhythm portion.
4. Use the lower keyboard to construct a new two-bar rhythm portion.

Note: Labels above the keyboard give the percussion instruments assigned to each key.

Note: The lowest key on the keyboard provides an ERASE function. Holding it down and pressing the key for an instrument erases all notes for that instrument from the pattern.

Note: The pattern automatically repeats so that you may add new notes on each subsequent pass.

Note: Pressing the CLEAR switch erases the entire rhythm portion–that is, returns you to Step 3.

5. Shift the PATTERN MAKER switch to the BASS position to play back the bass portion of the pattern.
6. Press the CLEAR switch to erase the bass portion.
7. Select a tone voice for the bass accompaniment.
8. Use the lower keyboard to construct a new two-bar bass portion.

Note: The pattern automatically repeats so that you may add new notes on each subsequent pass.

9. Shift the PATTERN MAKER switch to the CHORD position to play back the chord portion of the pattern.
10. Press the CLEAR switch to erase the chord portion.
11. Select a tone voice for the chord accompaniment.
12. Use the lower keyboard to construct a new two-bar chord portion.

Note: The pattern automatically repeats so that you may add new notes on each subsequent pass.

13. Press the rhythm selector switch with the ■ mark to store the new pattern.

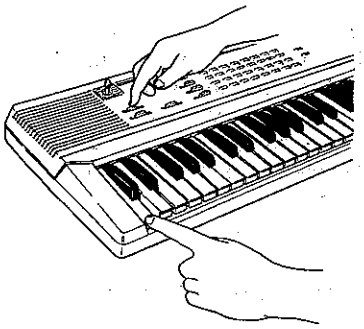
Note: Storing the new pattern erases the old. If you do not wish this to happen, cancel the entire operation by skipping this step.

Note: The stored pattern includes the MIXER settings for the RHYTHM, CHORD, and BASS parts.

14. Shift the PATTERN MAKER switch to its OFF position.

Note:

Holding down the lowest key on the keyboard (ERASE) as you turn on the power resets all patterns to the ones programmed at the factory.



7. RECORDER

This section allows you to record and play back up to three of your own performances as songs with a total of approximately 5,000 notes.

■ Procedure

Part I. Simple Recording

1. Use the STOP/SELECT switch to select the song number.

Note: Pressing the switch shifts the lighted LED.

2. Press the REC switch to place the recorder on standby.

Note: The REC LED lights.

3. Play or press the PLAY switch.

Note: The PLAY LED also lights.

4. Press the STOP/SELECT switch to suspend recording.

Note: Recording stops, and the REC LED flashes.

5. To continue recording, go back to Step 2.
6. Press the STOP/SELECT switch a second time to terminate recording.
7. Press the PLAY switch to play back the recorded song.

Part II. Overdubbing

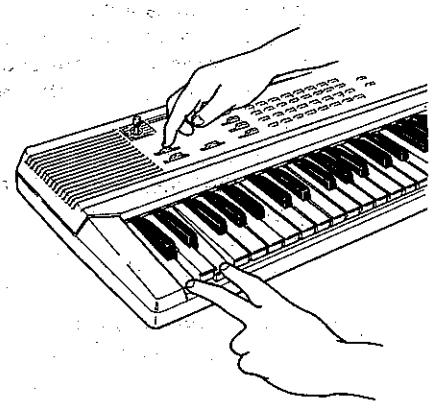
8. To overdub, repeat the entire procedure above as often as necessary.

Note: The maximum numbers of simultaneous voices used in each portion of the song must add up to a number less than twelve.

9. To abandon the most recently overdubbed portion and return to the preceding version of the song, hold down the REC switch and press the STOP/SELECT switch.
10. Repeat the previous step to abandon the entire song.

Notes

- The recorder does not support the joystick's DUET and VIBRATO functions or the TOP NOTE DUAL function.
- The recorder does not store the tempo with the data. Instead it uses the tempo in effect at the time of playback.
- Holding down the first (ERASE) and third white keys on the keyboard as you turn on the power erases the song as well as the new accompaniment patterns.



8. Other Functions

Holding down the two CHORD tone switches (PIANO and E. GUITAR) and simultaneously pressing the two lowest black keys on the keyboard activates the auxiliary functions TUNE, TRANSPOSE, and MIDI channel number.

Note: The REC and PLAY LEDs in the RECORDER section flash alternately while these functions are in effect.

Note: Pressing any switch not used by these functions —the START/STOP switch or a BASS tone voice selector, for example — returns the keyboard to normal operation.

Note: All three functions return to there default values when the power is removed.

8.1 TUNE

This function allows you to adjust the WK40's tuning to match that of another instrument — for ensemble playing, for example. Use the UP arrow TEMPO switch to raise the pitch and the DOWN arrow to lower it. Simultaneously pressing both arrow keys returns the instrument to the standard tuning. The tuning range is up to a quarter tone (50 cents) on either side of the standard pitch.

8.2 TRANSPOSE

This function tells the WK40 keyboard to automatically transpose what you play.
Press the REC switch and then use the UP arrow TEMPO switch to transpose up a semitone and the DOWN arrow switch to transpose down the same amount. Simultaneously pressing both arrow keys returns the instrument to the standard pitch. The transposition range is up to half an octave on either side.

8.3 MIDI channel number

The MIDI standard provides 16 data channels. To communicate, the transmitting and receiving MIDI devices must be using the same channel.
The default transmitting channel, the one in effect when the power is first applied, is channel No. 1. You may change this setting, however, with the MELODY tone voice switches.

MIDI

The internationally recognized MIDI standard allows you to connect your WK40 to personal computers, electronic musical instruments, and other MIDI devices. You may, for example, control a drum machine from your WK40 keyboard or, going in the opposite direction, play the keyboard from another MIDI device.

■ WK40 as MASTER

The WK40 MIDI interface transmits the following information:

- **Note data** — NOTE NUMBER (pitch) and NOTE ON/OFF (duration)
- **Program changes** — Commands to other devices
- **PITCH BEND information**

■ WK40 as SLAVE

The WK40 MIDI implementation receives on the following channels:

Channel	Part	Data accepted
1-4	MELODY TONES	KEY ON/OFF, VELOCITY, PROGRAM CHANGE, BENDER
14	CHORD TONES	KEY ON/OFF, VELOCITY, PROGRAM CHANGE
15	BASS TONES	KEY ON/OFF, VELOCITY, PROGRAM CHANGE
16	DRUMS	KEY NUMBER, VELOCITY

■ PROGRAM CHANGE NUMBERS

	No.	Tone Voice	No.	Tone Voice	No.	Tone Voice	No.	Tone Voice	No.	Tone Voice
MELODY	1	VOICE	2	PIANO	3	PIPE ORGAN	4	WOW BRASS	5	ELECTRIC GUITAR
	6	STRINGS	7	FLUTE	8	ELECTRIC PIANO	9	JAZZ ORGAN	10	TRUMPET
	11	HARMONICA	12	PLUCK HARP	13	OBOE	14	HARPSICHORD	15	ACCORDION
	16	SAX	17	SHIMMER	18	MUSIC BOX	19	SYNTHESIZER	20	VIBRAPHONE
CHORD	1	PIANO	2	ELECTRIC GUITAR	3	ELECTRIC PIANO	4	FUZZ MUTE	5	BRASS
BASS	1	ELECTRIC BASS 2	2	SLAP BASS	3	WOOD BASS	4	SYNTHESIZER BASS	5	TUBA

Key Numbers for Percussion Instruments

Key No.	Instrument	Key No.	Instrument	Key No.	Instrument
38	BD	44	HIHAT OPEN	50	LO.CONGA
39	CLAPS	45	HI TOM	51	LO COWBELL
40	SD	46	CRASH	52	HI CONGA
41	E.SD	47	E.LO TOM	53	HI COWBELL
42	HIHAT CLOSED	48	E.HI TOM		
43	MID TOM	49	RIDE		

PERSONAL KEYBOARD MODEL WK40 MIDI IMPLEMENTATION

Date: Aug. 1988
Version: 1.0

Function ...		Transmistted	Recognized	Remarks
Basic Channel	Default	1	1—4, 14—16	Recognized on multiple channels (CH 1-4, 14-16).
	Changed	1—16	×	
Mode	Default	3	3	
	Messages	×	×	
	Altered	**********	×	
Note Number	: True voice	36 — 84 **********	30 — 102	Channels 5-13 ignored.
Velocity	Note ON	× 9nV = 127, 96, 64, 32	× 9nV = 1 — 127	Channels 5-13 ignored.
	Note OFF	× 9nV = 0	× 9nV = 0, 8nV = XX	XX ignored.
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		○	○	
Control Change		×	×	
Prog Change	: True #	CH1-4: 1-20, CH14-15: 1-5 **********	○ 1—128	CH1-4: 21-128 CH14-15: 6-128 Recognized as 1.
System Exclusive		×	×	
System Common	: Song Pos	×	×	
	: Song Sel	×	×	
	: Tune	×	×	
System Real Time	: Clock	×	×	Does not transmit CONTINUE.
	: Commands	×	×	
Aux Messages	: Local ON/OFF	×	×	
	: All Notes OFF	×	×	
	: Active Sense	×	×	
	: Reset	×	×	

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO

○ : Y
× : N

SPECIFICATIONS

Keys	49
Voices	max. 12
MELODY tone voices	20 VOICE, PIANO, PIPE ORGAN, WOW BRASS, ELECTRIC GUITAR, STRINGS, FLUTE, ELECTRIC PIANO, JAZZ ORGAN, TRUMPET, HARMONICA, PLUCK HARP, OBOE, HARPSICHORD, ACCORDION, SAX, SITAR, MUSIC BOX, SYNTHESIZER, VIBRAPHONE
RHYTHM patterns	20 16-BEAT, BOSSA NOVA, DIXIELAND JAZZ, FUNK, WALTZ, ROCK, 8-BEAT, MAMBO, JAZZ, SAMBA, SHUFFLE, BLUES, DISCO, SALSA, COUNTRY, REGGAE, BOUNCE, MARCH, RAP, TANGO
CHORD tone voices	5 ELECTRIC BASS, SLAP BASS, WOOD BASS, SYNTHESIZER BASS, TUBA
BASS tone voices	5 PIANO, ELECTRIC GUITAR, ELECTRIC PIANO, FUZZ MUTE, BRASS
Effectors	VIBRATO, DUET, TOP NOTE DUAL, BEND UP/DOWN
Storage	RECORDER: Three songs, up to 5,000 notes total PATTERN MAKER: Four 2-bar patterns with chord, bass, and rhythm portions
Other switches	DEMO, START/STOP, SYNC/FILL IN, INTRO/ENDING
Speakers	Two, 10 cm in diameter, 2.5 W each
Power supply	DC Six "C" dry cells AC adapter
Jacks	PHONES/AUX OUT, STEREO MINI, MIDI IN/OUT, DC IN (9-12V)
Dimensions	770 x 285 x 70 mm (30.4 x 11.3 x 2.8)
Weight	3.9 kg (8.6 lb)

WARNING: This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it can cause interference to radio communications. The rules with which it must comply afford reasonable protection against interference when used in most locations. However, there can be no guarantee that such interference will not occur in a particular installation. If this equipment does cause interference to radio or the related equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

— reorient the receiving antenna.
— move the receiver away from the instrument.
— plug the instrument into a different outlet so that it and receiver are on different branch circuits.
— consult the dealer or a qualified service personnel.

- This instrument complies with the limits for a class B digital apparatus, pursuant to the Radio Interference Regulations, C.R.C., c. 1374.

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